

**SUMMARY OF THE  
U.S. NUCLEAR REGULATORY COMMISSION / U.S. DEPARTMENT OF ENERGY  
QUARTERLY MANAGEMENT MEETING  
IN LAS VEGAS, NEVADA  
DECEMBER 7, 2005**

**Introduction**

The U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE) held a public Quarterly Management Meeting on December 7, 2005. The meeting was hosted at the NRC's Atomic Safety and Licensing Board (ASLB) hearing facility in Las Vegas, Nevada, with video connections at the NRC Headquarters in Rockville, Maryland, the Center for Nuclear Waste Regulatory Analyses (CNWRA) in San Antonio, Texas, and the DOE offices in Las Vegas. Teleconference connections were also made available to interested stakeholders. The agenda for this meeting can be found in Attachment 1. Participants included representatives of the NRC, DOE, the State of Nevada, Affected Units of Local Government, Nuclear Energy Institute, other industry representatives, the press, and interested members of the public. Attachment 2 contains the list of attendees who were present at the above noted locations.

The purpose of this meeting was to discuss the overall progress of the Project at the proposed geologic repository site at Yucca Mountain (YM), Nevada. The discussions focused on an update of the NRC high-level waste program, the DOE high-level waste program, and the Yucca Mountain Project activities. The status of the action items from the past meetings and new action items resulted from this meeting were also discussed.

**Opening Remarks**

Jeff Ciocco, Office of Nuclear Material Safety and Safeguards, NRC, started the meeting by welcoming DOE management and staff, members of the public, and all other Stakeholders. He stated this meeting was open to the public for observation and that the public would have an opportunity to make public comments.

**NRC Program Update**

Ms. Margaret Federline, Deputy Director, Office of Nuclear Material Safety and Safeguards, NRC stated that this was the fourth and final management meeting in 2005. Ms. Federline acknowledged the press release of October 25, 2005, in which DOE outlined a new path forward, and stated the importance of DOE actively engaging the NRC staff on technical and regulatory issues. DOE should discuss with NRC any changes to the program which could impact activities at other NRC licensees and urged DOE to take the time necessary to ensure a high quality license application (LA). Ms. Federline emphasized that future management meetings should focus on program areas needing improvement.

Ms. Federline discussed the Environmental Protection Agency's (EPA) and NRC's proposed radiation protection standards rulemaking activities, noting EPA's public comment period ended November 21, 2005 and NRC's public comment period ends December 7, 2005. NRC takes the issue of potentially falsified documents by the U.S. Geological Survey (USGS) employees very seriously and DOE must demonstrate the adequacy of QA measures for activities important to safety and waste isolation. NRC will not rely on data that is not properly qualified.

Mr. Elmo Collins, Deputy Director, Division of High-Level Waste Repository Safety, NRC stated that NRC wants to understand the activities which support DOE's new path forward and any resulting change to the repository design and performance estimates, including the Critical Decision process, the transport, aging, and disposal canister, and the whole spent fuel handling system. The Key Technical Issues have played and continue to play an important role in assuring that DOE submits a high-quality LA. NRC staff completed review of all 293 agreements, responded to 285, of which 29 needed additional information, and that 8 are reviewed but not released pending resolution of USGS email issue. Mr. Collins stated the NRC would like a schedule from DOE for agreements needing additional information. DOE's changes in the design of preclosure facilities could significantly change the preclosure safety analysis and suggested future technical exchanges on seismic, Preclosure Safety Assessment, and Total System Performance Assessment (TSPA)-LA.

Mr. Collins highlighted the following activities that occurred since the last Quarterly Management Meeting:

- NRC staff observed a DOE audit of engineering products to determine the effectiveness of design control measures. NRC staff determined the audit was conducted effectively;
- NRC staff completed its fourth monthly LSN supplemental certification;
- NRC staff will continue to observe Probabilistic Volcanic Hazard Analysis meetings, and monitor results of the drilling program as they become available;
- NRC Commissioners denied the State of Nevada's "Petition for Rulemaking to Amend the Commission's Waste Confidence Decision and Rule to Avoid Prejudging Yucca Mountain." The State of Nevada is appealing the Commission's denial;
- NRC is analyzing public comments on the State of Nevada's petition to amend 10 CFR Part 51.109;
- The next NRC/DOE Quarterly Management Meeting will be held on March 21, 2006, at NRC's auditorium in Rockville, Maryland.

### **DOE Program Update**

Mr. Eric Knox, Associate Director for System Operations and External Relations, Office of Civilian Radioactive Waste Management (OCRWM), provided an overview of the OCRWM program and noted that late last spring, Secretary Bodman asked

Mr. Paul Golan to take a hard look at the Yucca Mountain Project. This review is now complete, and findings and actions have been discussed with the Secretary. In addition, in October, Mr. Golan, Acting Director, held an all-employees meeting to share with DOE Federal and contractor staff our path forward and the basis for the new direction. The new path forward focuses on improvements to the safety, operation, and long-term performance of Yucca Mountain. The focus of the path forward is to: first, improve contract management, by taking the responsibility for setting expectations and requirements; second, improve project management by establishing a configuration-controlled baseline; third, improve the quality of the organization by adopting a "trust-but-verify" culture and establishing a culture that is appropriate for regulation; and fourth, improve safety and reliability of the work while reducing complexity, where complexity is not warranted or does not add value.

Mr. Knox noted that on October 25, 2005, DOE directed the contractor to develop a revised approach that would improve operation of the planned surface facilities at Yucca Mountain by operating primarily as a non-contaminated or clean set of facilities. In the new approach, spent nuclear fuel would be transported to the repository in a sealed canister that would not need to be opened before it would be placed in a waste package for disposal. DOE will need to work closely with the utilities and the NRC to develop this canister and define this approach. The revised approach will be sent to the Energy Systems Acquisition Advisory Board (ESAAB) for review and approval. If approved by ESAAB, this approach would become the project's new baseline.

DOE is also exploring the possibility of designating a lead national laboratory to coordinate post closure scientific work of the project.

Mr. Knox stated that one element that is critical to DOE success is its people. OCRWM has a strong, technically capable and experienced staff; and maintaining that expertise over the coming years is a priority that DOE wants to focus on in the near term. Over the past 4 months, over 40 Federal positions have been advertised. Because of the long-term nature of the project, DOE has established an intern program to recruit bright new people with formal training in technical and scientific disciplines who can become the next managers for the program. DOE has begun the interview process for some of these interns and our goal is to have 18 interns onboard by December 2006.

Mr. Knox then introduced Mr. Mark Williams the Director, Office of License Application and Strategy, which was previously held by Mr. Joe Ziegler. Mr. Williams has over twenty-five years of nuclear related experience and joins OCRWM from the Office of Environment, Safety and Health where he was involved in the safety of DOE nuclear facilities for fifteen years. The position of QA Director will be permanently filled soon as well.

Mr. Knox then provided an update on the USGS email issue. DOE is continuing to evaluate the technical impacts and is preparing a draft report. DOE has also been performing an assessment of programmatic impacts by using a Level A root cause analysis that follows the procedure described in AP 16.4Q, "Causal Analysis and

Corrective Action Plan Development.” An “extent of condition” review to determine whether issues similar to or associated with those identified in the USGS emails exist within the Program is also being performed. As input to the extent of condition review, DOE conducted several review processes, looking at relevant and non-relevant e-mail, employee concerns records, and QA records. These reviews are now being updated to include records generated through November 1, 2005, and to provide additional rigor in some areas. Mr. Gene Runkle has been appointed as Project Manager for all actions associated with the USGS email issue. Although DOE is working aggressively to complete this work, there is not a specific date for completion at this time.

Finally, Mr. Knox addressed budget priorities as follows: 1) work on the revised canisterized fuel handling approach; 2) safety upgrades at the site, and 3) science.

### **DOE Yucca Mountain Project Update**

Mr. John Arthur provided an update of recent activities and progress on the Yucca Mountain Project, including information on the following: 1) the recently announced primarily canisterized approach; 2) status of the Licensing Support Network (LSN) and LA, 3) proposed DOE/NRC technical interactions; 4) improvements to the performance indicators; 5) the corrective action program (CAP) and use of trending program by management; and 6) recent reviews associated with requirements management.

Mr. Arthur noted that DOE has looked at ways to add a simpler approach to operations leading to our evaluation of a primarily canisterized fuel operating model. The change means that spent nuclear fuel would be sent to the repository in a standardized canister that itself could be disposed in the repository and therefore would not require repetitive handling of fuel prior to disposal. Prior to incorporating these changes into an LA, DOE needs to modify its approved project baseline as established in June 2004. The current scope of the baseline includes mainly bare fuel handling under a primarily dry operating model, which includes fuel handling, canister handling, and dry transfer facilities, an aging pad, subsurface emplacement panels, and waste packages and drip shields.

Mr. Arthur identified the five critical decisions which are utilized by DOE to control the acquisition of assets. At these decision points, DOE will decide whether a project is ready to proceed to the next phase. On October 25, 2005, DOE issued a letter to Bechtel SAIC Company, LLC (BSC), which directed the development of a revised Critical Decision-1 (CD-1) package, including conceptual design, for accepting and handling primarily canisterized fuel at the repository. Features of that design approach include minimizing handling of individual spent nuclear fuel assemblies, development of minimum bare fuel handling capability for off-normal and remediation capabilities, utilization of the current design to the extent practicable, maintaining a phased construction approach, including the capability for both truck and rail deliveries, minimizing impact on initial conditions for the post closure safety case, and evaluating and recommending other system optimizations. Additionally, on November 17, 2005, a second letter was sent to BSC providing further information regarding the requirements of the revised design approach.

DOE has received the preliminary report from BSC and is currently reviewing the impacts on: 1) safety, operation, and long-term performance of a repository at Yucca Mountain, Nevada; 2) fuel handling, construction and operations of the repository; 3) the number and types of facilities needed for repository operations; and, 4) the License Application. DOE expects to complete its review in approximately one month.

With regard to progress towards certification of the LSN, Mr. Arthur stated that as of late September 2005, DOE had substantially completed processing the documents necessary for certification of the LSN, other than special issues like the ongoing privilege review and addition of newly generated documents. On September 22, 2005, the NRC's Pre-License Application Presiding Officer Board (PAPO) issued a decision holding that a July 2004 draft of the LA was a "circulated draft" which should be placed on the LSN. On October 3, 2005, DOE appealed the PAPO Order to the NRC Commissioners. DOE continues to process documents for production to the NRC website. Currently, approximately 3.3 million documents are loaded on the website. Mr. Arthur noted that DOE will not be able to estimate the date of LSN certification until after final disposition of its LSN appeal and evaluation of the effects of the current evaluation of potential change in program direction are completed.

Next, Mr. Arthur discussed the status of the LA. Mr. Arthur noted further development of the LA will be impacted by any CD-1 design change, the final EPA rule on standards for the period of peak risk and related changes to 10 CFR Part 63, and resolution of the QA issues related to the infiltration analysis.

Mr. Arthur indicated that the draft LA is under configuration control and that the Project will proceed in a disciplined and deliberate manner to produce a high quality LA. Work currently underway focuses on the following areas:

- Work to be replaced in the moisture infiltration modeling and technical analysis. DOE is conducting a line-by-line evaluation of the relevant code, and in parallel is developing a separate model. DOE will replace the original infiltration model with one that can be defended in the regulatory process.
- Modeling and technical analysis to support compliance with the standard proposed by EPA.
- Evaluation of sections of the LA that could be affected by implementation of the canister approach.

Mr. Arthur mentioned that the LA will be submitted when OCRWM has reviewed the document and has determined that it is ready to submit to the NRC. The overall schedule for LA submittal will be determined through the decision process mentioned earlier.

On the subject of performing evaluations of the reproducibility of five Analysis and Model Reports (AMR) that provide input to the Total System Performance Assessment for the LA, Mr. Arthur noted that the purpose of this effort was to utilize models, software, and data in existing management systems, and try to reproduce AMR

results without recourse to the originators. The evaluation is being performed by the Office of License Application and Strategy (with cooperation of the Office of Quality Assurance) as an independent assessment in accordance with procedure LP-PMC-006-OCRWM, "Independent Assessments." The results from the first AMR to be reviewed are documented in an independent assessment report which was issued in August 2005, which indicated, among other things, that the model documentation was transparent and that reproducibility was considered satisfactory. The results from the evaluations performed against the other four AMRs will be documented in a second report, to be completed after evaluation of the one remaining model. The final report dealing with the last four AMRs is likely to be completed in the first quarter of calendar year 2006, and will be available through the records system.

With regards to planned technical interactions, Mr. Arthur noted that DOE continues to believe that interactions with the NRC on the type of information that DOE intends to provide in a LA are useful and productive. DOE responded to NRC's September 2005 letter on "Proposed Guidelines for Preclosure Pre-Licensing Interactions" on October 24, 2005. As stated in the letter, DOE believes that adoption of these guidelines will ensure effective interactions by developing concrete, specific objectives for the meetings and focusing DOE's presentations on NRC's areas of interest and on regulatory requirements. DOE has reviewed the topics listed in NRC letter and agrees that, because they represent areas in which structures, systems, and components may be required to mitigate event sequences, it is important to reach a common understanding in these areas.

DOE believes that it can now move forward on scheduling discussions in the areas of preclosure safety analysis, preclosure information available at LA submission in February 2006, DOE critical decision process in January/February 2006 time frame, and preclosure seismic methodology during spring/summer 2006. DOE also believes that a technical exchange on NRC's Licensing Review Program Plan would be productive and would like to move forward with scheduling these interactions in the near term. Other topics under consideration for near-term interactions include aircraft crash event sequences, and an Appendix 7 visit on work that has been ongoing at the natural analog site at Pena Blanca, Chihuahua, Mexico. Mr. Arthur indicated that DOE will work with the NRC staffs to prepare an interactions calendar in January 2006 that reflects these interactions as well as others that are expected to be of benefit.

Regarding performance indicator improvements, Mr. Arthur said that DOE is improving certain performance indicators to reflect the change in direction and update of management controls.

Performance measures constructed in concert with the CD-1 submittal will be modified to facilitate overall management of all federal as well as implementing contractor efforts. The principle measures being reviewed will be design, LA development, PCSA, TSPA and site infrastructure. Other measures which will have minimal to moderate revisions include Safety Conscious Work Environment (SCWE), Human Performance, Self-Assessment, Corrective Action Program (CAP) effectiveness and safety performance.

Next, Mr. Arthur talked about the CAP. DOE continues to improve the CAP system and implementation continues to improve for self-identification and effectiveness. Some of the areas that are contributing to this improvement are enhanced Management Review Committee effectiveness, enhanced root cause analysis methods, continued improvements in apparent cause analysis, and continued improvements in the Condition Report (CR) screening team process.

Mr. Arthur indicated that DOE is still not meeting the 30 day planning goal for Level B CRs, however this situation is improving and the present six month rolling average is 41 days. DOE is also exceeding the average time to complete the Level B CRs against planned scheduled dates for completion. The six-month rolling average is showing 21 days in excess of the goal of having the average of all Level B CRs complete on or before the planned scheduled date for completion. DOE is placing the appropriate management attention to these areas.

For Level C CRs, DOE has maintained the ability to plan Level C CRs within the 30 day goal, with the 6 month rolling average being 18 days and have maintained the ability to complete Level C CRs within the planned time frame and is actually completing the Level C CRs earlier than scheduled. Based on a six month rolling average, DOE is beating the planned date by 29 days. The QA organizations have verified that conditions adverse to quality have been successfully closed with no issues 90% of the time. The corrective action effectiveness independently verified by the QA organizations continue to measure at a 90% rate based on a six month rolling average.

Mr. Arthur then discussed the Trend Report and provided some comparative data which is reflective of improvements made on the project as a result of issues being identified via the trend report and subsequently addressed by both management and responsible organizations (line management). Line Management engagement in the trend process has increased steadily since January 2004. The ability to trend has recently been enhanced by updated and revised event codes. These codes incorporate lessons learned by applying event codes to CRs generated over the past 18 months and tying them to Responsible Area Owner functions. The use of the monitoring and emerging trends introduced in the latest (4th Quarter FY05 Trend Report) will assist in improving early identification and resolution of issues.

Trending is shifting from a quarterly report to an on-going trend process. Monitoring and emerging trends will be evaluated as part of the screening process allowing early identification of potential trends rather than being identified solely during the quarterly trend analysis process. The Trend coordinators will meet periodically during the quarter to review the status of items, evaluate the data and share ideas and techniques on effective trending. Emerging trends from the current trend report were identified by the responsible organizations, reinforcing the management expectation for demonstrating ownership of the issues and trends. Future trend reports will track the progress of trends through resolution. It is important to note that a number of adverse trends identified

during the quarter were not associated with the quarterly trend process, but rather through the questioning attitude of the workforce.

Improvement areas include an increase in CRs issued per month and positive increase in Line identification of CRs. Mr. Arthur then discussed a number of issues and corrective actions underway in management, configuration control and flow-down of requirements associated with our engineering and design.

A recent OCRWM Concerns Program (OCP) investigation into allegations referred to DOE by the NRC, and a concurrent DOE root cause analysis revealed that the Project has not maintained and properly implemented its requirements management system, resulting in some inadequacies in the design control process. This uncertainty regarding the adequacy of design products will be resolved. These failures occurred because sufficient priority has not been placed on requirements management. DOE believes strong actions are required to address the current situation, identify and remediate impacted products, and prevent recurrence. DOE also believes it needs to define and acknowledge management responsibility for these problems to its employees, and reaffirm its commitment to a strong safety culture. DOE intends to learn from its mistakes in requirements management.

The OCP investigation looked at four allegations related to deficiencies in BSC's requirements and design control processes. The DOE root cause analysis examined DOE's failure to maintain its requirements management documents, identifying the root cause as DOE's failure to fund, maintain, and rigidly apply a requirements management system as part of a configuration management process.

Mr. Arthur noted that both the OCP investigation and root cause analysis effort revealed that requirements management deficiencies had been previously noted, but opportunities were missed to initiate root cause analyses such that effective corrective action could be taken. Mr. Arthur then described actions to be taken to respond to the deficiencies noted. DOE will take the immediate action of suspending approval of all Design and Engineering and PCSA technical products subject to our Quality Assurance Requirements Document (QARD) and an extent of condition evaluation will be conducted to determine if the suspension of approval of other technical products needs to be initiated. DOE will take remedial actions to ensure Design and Engineering and PCSA products meet current requirements (both technical and performance) and will institute process improvements to prevent recurrence. DOE management will take a more active role in the CAP and will communicate the reason work activities have been suspended to their respective organizations. DOE will convene an integrated product team, to ensure activities needed to perform these activities are integrated. These actions will ensure that products developed to support the LA will meet applicable requirements and are transparent and traceable.

Mr. Arthur mentioned that DOE plans on performing a SCWE survey in the summer of next year. The survey will be distributed OCRWM wide and DOE will keep NRC informed on this issue.



Ted Feigenbaum (BSC), stated that the Corrective Action Program is the heart of the QA program, and that the program is moving toward cutting off problems before they become conditions adverse to quality by analyzing and identifying early trends, and taking full advantage of the system to identify and fix problems.

In response to a question by Mr. Collins, Mr. Arthur stated DOE would not present a CD-1 until the issues with flow-down of requirements for design are resolved. Mr. Arthur stated DOE will integrate the CD-1 with improvements in the requirements management process. Mr. Collins stated the issues with the CAP has the attention of NRC, in terms of real outcomes and asked Mr. Arthur if anything would be done differently regarding anonymity for the upcoming SCWE survey. Mr. Arthur stated there weren't many issues regarding anonymity and stressed the need for consistency with some of the survey questions, which has been learned from benchmarking experience with utilities.

Ms. Federline stated DOE's November 17, 2005 letter to BSC addressed many program requirements and applauded DOE's systematic approach in evaluating five AMRs on the biosphere, atmospheric dispersion, saturated zone flow and transport, drip seepage, and particle tracking. DOE was commended on its discussion of the corrective actions program, adding that DOE should look at the outcomes of the CRs.

Mr. Fred Brown stated the importance of DOE management's involvement in the CAP and that DOE should not think of the program as separate, but rather, integrated as a business process with all program activities.

In response to a question by Mr. Robert Latta regarding the different assigned significance levels of two CRs (6278 and 6233), Ms. Margaret McCullough, BSC, indicated that, although the two CRs are related to requirements management, they have been classified at different significance levels because the issues are different. For example, the issue in 6233 (Level B) is one of failure to apply adequate change management as the requirements tracking tool was transitioned from a manual to an automated system. The decision not to update the manual system was documented during the processing of a previous CR ( 2343) that dealt with the implementation of the new requirements management system. Mr. Latta disagreed with this assessment and stressed the need for DOE to take actions to improve the requirements program and to have an effective change control configuration.

### Design Update

Mr. Paul Harrington, Acting Director of OCRWM's Office of Project Management and Engineering, provided a Project design and engineering update, including information on an initial review of a preliminary report on CD-1. Mr. Harrington noted that on October 25, 2005, DOE directed BSC to develop a revised CD-1 package. BSC's preliminary report for CD-1 revision was received by DOE on November 23, 2005, and is

currently under review. CD-1 includes implementation of a canister-based approach under which: 1) spent nuclear fuel (SNF) generally would be sent to the repository in a standardized Transportation, Aging and Disposal canister (TAD); 2) fuel would not require repetitive handling prior to disposal; and, 3) lessons learned from previously developed design detail can be applied. Some individual SNF assembly handling will be required for truck or other uncanistered transportation casks, dual-purpose canisters, or remediation activities. All SNF handling can be done safely; however, canisters require less handling than individual SNF assemblies do. Further, Category 1 event sequences are likely to be eliminated.

The preliminary report on canister-based operations focuses on simple, safe, and clean operations, including: 1) disposable canisters; 2) minimum individual SNF assembly handling; 3) a phased construction approach; and 4) capability for both truck and rail deliveries. The report also addresses functions required for SNF handling and disposal and likely waste stream proportions. The report evaluates material flows rather than building layouts and maintains operations as clean as possible. The evaluation identifies variables and options for surface facilities that address SNF proportions (i.e., TADs vs. uncanistered), simplifies handling, design and safety analysis, reduces dose to workers, increases use of standard industry processes, and increases flexibility, modularity, and throughput.

As for the overall design impact, much of repository design is not impacted by incorporation of TADs. Areas with likely minimal impacts include:

- General subsurface configuration, with possible small increase in footprint;
- Design for transporting waste packages to subsurface, and associated emplacement equipment;
- Waste package design, with possible additional configuration similar to naval long waste package;
- Approach for handling DOE SNF and high-level (radioactive) waste (HLW) and navy materials;
- Aging pad configuration.

Also, much of repository preclosure safety analytical approach is not impacted by TADs. Areas with minimal impacts include amount of design information necessary for (separate from the actual configuration of) concrete structures, ventilation systems, electrical power systems, and most balance of plant systems. However, there will be a need to update affected nuclear safety design bases and analyses.

The path forward includes general schedule for selection and future CD-1 development. The review of the preliminary report will be completed by late 2005. Development of revised CD-1 package is expected by early 2006 followed by DOE approval of revised CD-1 and LA design modifications and updates to preclosure and postclosure safety analyses.

Ms. Federline stated DOE's new path forward indicates that spent nuclear fuel will arrive at Yucca Mountain in a TAD canister, which is inside a transport container, and asked when the LA would be benchmarked to the CD-1. Mr. Harrington stated the LA will follow the CD process, which will identify options for the surface facilities. Ms. Federline asked if DOE will take a system-wide look at the potential for increase of worker doses with the redesigned facilities. In response, Mr. Harrington stated that most doses to workers would come from the receipt and handling of the transportation casks, and those doses would be little affected. The redesign is expected to reduce worker exposures associated with maintenance of the equipment that would have handled individual fuel assemblies. Mr. Harrington clarified that DOE doesn't anticipate many subsurface design changes as a result of CD-1.

Mr. Jack Parrott stated DOE's path forward needs to address improvements in requirements management. Dr. Budhi Sagar, CNWRA, asked about considerations for adding an amorphous metal coating on the waste package and if it is currently part of the conceptual design. Mr. Harrington responded that DOE is looking at this from a science and technology perspective and is premature at this point to know whether it will be incorporated in the waste package design.

Mr. Wesley Patrick, CNWRA, asked a question about CD process. DOE responded by explaining the contents of a CD-1 would include a conceptual design, project execution plan, cost estimates, a risk management plan, safety evaluation, and an acquisition plan.

#### **Quality Assurance Program Update**

Michael Ulshafer, Acting Director, OCRWM Office of Quality Assurance (OQA) provided an overview of the Quality Assurance Program focusing on: 1) Quality Assurance Requirements and Description (QARD), Revisions 17 and 18; 2) CAP oversight; 3) OQA audits/surveillances; 4) and Management & Operating (M&O) contractor QA audits/surveillances.

With regard to QARD Revision 17, Mr. Ulshafer noted that the NRC conditional acceptance required several clarifications. QARD Revision 17 is expected to be implemented in the spring of 2006, allowing time for the necessary procedure revisions. Also, QARD Revision 18 is planned for later in the year, and will combine the QA requirements of 10 CFR 63.142 and DOE Order 414.1.

Mr. Ulshafer then briefly described OQA oversight of several Level A and B CRs discussed earlier by Mr. Arthur and indicated that the line organizations have responsibility for the work and associated CRs and that OQA works cooperatively with the line to monitor progress and resolve issues.

Next Mr. Ulshafer described several completed OQA audits of BSC and OCRWM and also described upcoming audits of: 1) the BSC CAP and trending; 2) the United States Geological Survey (USGS); 3) the Savanna River National Laboratory Plutonium Vitrification Project; and, 4) the National Spent Nuclear Fuel Program.

With regard to Management & Operating (M&O) Contractor QA Audits/Surveillances, Mr. Ulshafer noted completed audits of: 1) scientific investigation, measuring and testing equipment, and sample control; 2) the USGS; 3) National Laboratories and Test Coordination Office; and, 4) supply chain activities. Mr. Ulshafer also noted completion of four surveillances of scientific activities, and two surveillances of transportation subcontractor activities. Mr. Ulshafer indicated that upcoming QA audits include: 1) implementing documents and document control; 2) software control; and, 3) site activities. Upcoming notable QA surveillances include site activities, CAP, Level C CR Processing, and removal of Lawrence Berkeley National Laboratory measuring and test equipment in tunnel.

With regard to scope of audits, Mr. Fred Brown (NRC) noted that he appreciated prompt information and communication flow of schedule of audits. However, he still struggles to understand scope of audits in advance. Mr. Brown noted that audit program is intended to review the full scope of activities through a given period and that the scope of the audit needs to be determined long in advance and not as a last minute negotiation. DOE responded that this is part of the dynamics of the project. Normally, the scope is planned six weeks in advance of audit and the details of scope are determined four weeks prior to actual performance of audit. Mr. Elver Robbins (DOE) added that specifics and products to support audits may not normally be available until a month before the audit, thus limiting the ability to finalize scope. Mr. Robbins noted that audits are identified and planned based on QARD elements. Considering the full scope of QARD activities, as time approaches DOE looks at what is available for scoping, and development of a checklist. Mr. Brown stated that he appreciated the clarifications and noted that this is an area where ongoing discussion is needed to get a clearer understanding of the issue. Dr. April Gil (DOE) responded that DOE appreciates NRC's comments on improvement in communication on this issue and that DOE has put a lot of attention and effort into these improvements and will continue to do so in order to maintain this level of communication.

Mr. Robert Latta noted that the current activity related to the infiltration model in response to USGS issues represents a new quality-affecting activity and asked whether DOE has audits planned. Mr. Robbins responded that DOE has not planned an audit at this time. However, DOE has planned an audit in July for selected models and that an audit of the process will be considered.

### **NRC/DOE Closing Comments**

Ms. Federline stated the need to establish clear objectives for future Quarterly Management Meetings and that NRC now has an understanding of DOE's new path forward and stated DOE should be sensitive to the impacts of program changes on the Safety Conscious Work Environment. Ms. Federline encouraged DOE not to lose sight of existing program improvements and requested that commitment from DOE to apply design control processes to the CD-1 and accepted Mr. Arthur's suggestion for technical exchanges on the CD-1 process, TSPA and TPA, and future briefings on how the

Transport, Aging, and Disposal canister will be integrated into the system, including an analysis of this new system in comparison to other NRC-regulated programs. Future Quarterly Management Meetings should address DOE's progress on its new path forward and address integration and potential impacts on other components of the waste management system at other sites or other NRC-regulated programs.

Ms. Federline was concerned with the effectiveness of DOE's CAP and stated that DOE should focus on outcomes and how they change the performance of the organization and requested a separate management meeting to address issues with DOE's CAP. Ms. Federline emphasized the need for increased communication with DOE that is open and transparent and addresses issues.

Mr. Knox reinforced DOE's commitment to continue to have open dialog with NRC at all levels.

Mr. Arthur reiterated that the DOE is moving ahead with the canisterized approach and is staying within the bounds of the Environmental Impact Statement. DOE takes the requirements management issue seriously and will ensure that the right configuration control processes are in place. The canisterized approach will be viewed as a total system with sensitivity to the needs of utility customers.

Mr. Ted Feigenbaum stated that we understand the need to have strong robust requirements flow down and have been developing a state-of-the art electronic database that will deliver confidence to BSC, the DOE, and NRC that we have a strong system. Once the requirements are set, including federal, state, and contractual, they will be allocated to the proper processes.

Mr. Mike Ulshafer stated that as part of the examination of the USGS infiltration model, we take our quality involvement very seriously. DOE has assigned an experienced Quality Engineer to perform a surveillance.<sup>1</sup> The Quality Engineer is involved in all aspects of the on-going work, including software and models and at the end of the effort, will look at overall results and document the findings in a surveillance report. In addition, DOE will evaluate performing an audit in the future on this activity.

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<sup>1</sup> Subsequent to the meeting, additional investigation determined that a surveillance is not currently being conducted on the examination of the USGS infiltration work. However, OQA has a Quality Engineer presently monitoring the work being performed on the examination of the USGS infiltration work. This work is expected to be documented in an AMR in March 2006. Based on the OQA Quality Engineer's ongoing efforts and the OQA staff's discussions with the Technical Manager for the infiltration model work at the Sandia National Laboratory, OQA is planning to perform an audit of the Infiltration Model work in the January-February 2006 timeframe.

### **Action Item Status**

DOE and NRC agreed to keep open previous action items MM 0402-C1 and MM 0506-01, and MM0509-01. One new action item identified requires DOE to provide to NRC a schedule for submittal of planned additional information needs for the remaining key technical issues under review by the NRC.

Status of the action items is summarized in the following table.

### **Public Comments**

Several comments by members of the public were noted as follows:

Ms. Judy Treichel, Nevada Nuclear Waste Task Force, asked whether the DOE will be building more than one canister, a truck canister and a rail canister, and how is that design different from MPC overpack, and whether the inner canister and overpacks will have to be certified. Mr. Harrington responded that the initial canister size is 21 PWR and 44 PWR capacity, the same as the standard waste package. A reassessment of those types of constraints will determine whether smaller or larger TADs are to be considered. Ms. Treichel noted that public comments on EPA rule are no longer available on EPA website following expiration of the comment period and that public needs to have access to comments and asked whether the NRC intends to also make public comments inaccessible to the public after the Part 63 rule comment period has expired. Mr. Collins responded that the NRC will communicate back to the State on actual details of where the comments will be available on the NRC rulemaking.

Mr. Steve Frishman, State of Nevada, noted that DOE is interested in re-evaluating the infiltration model and asked who will be performing the evaluation, how long will it take, and will it involve any new data collection. Don Beckman (BSC) responded that the work is being performed by BSC with SNL and is currently scheduled to be complete this spring. It will involve interpretation of existing data. What DOE is doing with data and software is a step-by-step examination of the content and reapplying appropriate QA processes. For example, on software, a line-by-line re-verification of mathematical algorithm has been done on the model.<sup>2</sup> Mr. Frishman noted that since QA was the issue and is still the issue, a "rolling QA surveillance" may not be enough and DOE needs to schedule a mid-term audit of the infiltration evaluation. Mr. Feigenbaum, BSC, agreed with this assertion.

Ms. Shannon Meade, House Government Reform Committee Federal Workforce, noted that it is her understanding that redoing the model is already in progress and a surveillance at this point is somewhat retrospective. DOE responded that an audit will be


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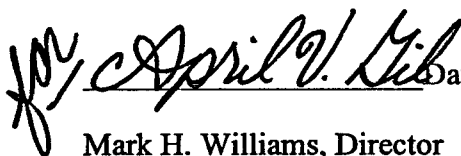
<sup>2</sup> Subsequent to the management meeting, it was determined that the statements made regarding the infiltration data and software require clarification. Currently, Bechtel SAIC Company, LLC, along with Sandia National Laboratories and others, are preparing a new AMR for infiltration that will result in new maps, and new results. This technical basis will be used to support the Total System Performance Assessment analysis and the LA.

performed over the next several months and there will be QA involvement throughout the process. Ms. Meade noted, with regards to USGS email issue, that DOE concurred with the November Inspector General findings and recommendations and will expand the review of archived emails and asked what specifically is DOE doing to ensure that emails which are adverse to quality are identified. Mr. Gene Runkle, DOE, responded that DOE is going back looking at 25,000, emails, both relevant and non-relevant. DOE will address and put into the process new findings with any conditions adverse to quality. Ms. Meade noted that as other issues are identified and evaluated the initial draft of the technical review report is going to be substantially different from its current form. Mr. Runkle responded that the report has been reviewed by several experts in infiltration modeling work and hydrology. Their comments support information in the report and have suggested that DOE also look at other relevant scientific literature, which DOE is doing. The report is being developed and finalized at this time.

In response to a question by Ms. Meade regarding the trending report, Mr. Arthur noted that DOE has just issued the last report and that others will be issued every three months with next scheduled for February 2006. Mr. Arthur noted that a copy of the most recent report will be provided to Ms. Meade.

The meeting was adjourned.

 Date: 1/6/06  
C. William Reamer, Director  
Div. of High Level Waste Repository Safety  
Office of Nuclear Material Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission

 Date: 1/5/2006  
Mark H. Williams, Director  
Office of License Application and Strategy  
Office of Repository Development  
U.S. Department of Energy

**Consolidated Action Items**  
**From the NRC/DOE Quarterly Management Meetings**  
**(December 15, 2005)**

Item No.	Description	Status
MM 0402-C1	DOE will identify any to-be-verified (TBV) data in the LA that needs to be qualified (if any) at the time of LA submittal (Commitment).	Open. This item will remain open until LA submittal.
MM 0506-01	DOE and NRC to determine the dates for the list of proposed technical interactions discussed during the June 6, 2005 Management Meeting.	Open. This item will remain open as a continuing action and will report progress at December management meeting.
MM 0509-01	DOE/NRC to hold technical exchange after the DOE report addressing the USGS alleged falsification of documents has been released by the Secretary.	Open. This item will remain open as a continuing action and will report progress at December management meeting.
MM 0512-01	DOE to provide to NRC a schedule for submittal of planned additional information needs for the remaining key technical issues under review by the NRC.	Open

Note: The Quarterly Management Meeting action items are designated as "MM yymm-nn" where yy is the two digit year, mm is a two digit month and nn is a two digit action item number from that meeting.